

Access/DB# 87534

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Alissa Hbey Examiner #: 16950 Date: 2/26/03
Art Unit: 3165 Phone Number 308-6094 Serial Number: 09/686,729
Mail Box and Bldg/Room Location: 4/B24 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.
Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Minimally invasive annuloplasty procedure and apparatus

Inventors (please provide full names): John D. Nguyen, Arthur Hill, Laurent Schaller

Earliest Priority Filing Date: 10/10/00

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

An annuloplasty method - providing clips each having two end points which are separated from each other when the clip is in an open configuration and tending to return to a naturally closed configuration by reducing distance between the end points when in the open configuration.

A mitral valve replacement method using the annuloplasty method as described above and additionally removing mitral valve portions to be replaced, placing a prosthesis sewing cuff ~~to a tissue~~ where the valve portions have been removed. Attaching the prosthesis sewing cuff to a tissue around the removed valve portions by causing the clips to penetrate both the prosthesis sewing cuff and the tissue.

STAFF USE ONLY

Searcher: JEANNE MORRIGAN

Searcher Phone #: 305-5934

Searcher Location: CP2-2008

Date Searcher Picked Up: 2/27

Date Completed: 2/27

Searcher Prep & Review Time: 181

Clerical Prep Time: _____

Online Time: 64

Type of Search

NA Sequence (#) _____

AA Sequence (#) _____

Structure (#) _____

Bibliographic ☒

Litigation _____

Fulltext ☒

Patent Family _____

Other _____

Vendors and cost where applicable

STN _____

Dialog ☒

Questel/Orbit ☒

Dr. Link _____

Lexis/Nexis _____

Sequence Systems _____

WWW/Internet _____

Other (specify) _____

February 276, 2003

TO: Alissa Hoey, Art Unit 3765
CP 2, Room 4-B-24

FROM: Jeanne Horrigan
ASRC Searcher in EIC3700

SUBJECT: Search Results for Serial 09/686729

Attached are the search results for the annuloplasty/valve method using clips, including results of inventor and prior art searches in foreign/international patent databases and prior art searches in medical and general sci/tech non-patent literature databases.

The results are organized into three sets:

- Inventor search in foreign/international patent databases and major medical/sci/tech databases;
- Prior art search in foreign/international patent databases; and
- Non-patent literature prior art search.

The search strategy and databases searched are listed at the beginning of the results for those databases. I tagged items that seemed most relevant to me, so to save time you can start by reviewing those. However, I **suggest that you review all of the results.**

Also attached is a search feedback form. Completion of the form is voluntary. Your completing this form would help us improve our search services.

I hope the attached information is useful. Please feel free to contact me (phone 305-5934 or email jeanne.horrigan@uspto.gov) if you have any questions or need additional searching on this application.

Alissa,

I did not tag relevant patents by the inventors, but they have done a lot in this area. You might want to check out their work in the attached ~~section~~ "Inventors" section.

Jeanne

Searcher: Jeanne Horrigan

February 27, 2003

1

Serial 09/686729

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200313

File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)

File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	6	AU='NGUYEN J D'
S2	66	AU='HILL A'
S3	20	AU='SCHALLER L' OR AU='SCHALLER L B':AU='SCHALLER LAURENT B'
S4	2	S1 AND S2 AND S3
S5	83	S1:S3 NOT S4
S6	750934	VALVE? ? OR ANNULOPLASTY OR ANNULUS OR ANULUS
S7	73575	CLIP OR CLIPS
S8	2	S5 AND S6
S9	7	S5 AND S7
S10	0	S8 AND S9
S11	9	S8:S9

4/7/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

014562700 **Image available**

WPI Acc No: 2002-383403/200241

Annuloplasty method involves of providing clips and placing around annulus

Patent Assignee: COALESCENT SURGICAL INC (COAL-N)

Inventor: HILL A ; NGUYEN J D ; SCHALLER L

Number of Countries: 097 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200230298	A1	20020418	WO 2001US42653	A	20011010	200241 B
AU 200211907	A	20020422	AU 200211907	A	20011010	200254

Priority Applications (No Type Date): US 2000686729 A 20001010

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
-----------	------	-----	----	----------	--------------

WO 200230298	A1	E	29	A61B-017/10	
--------------	----	---	----	-------------	--

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200211907 A... A01B-029/04 Based on patent WO 200230298

Abstract (Basic): WO 200230298 A1

NOVELTY - The annuloplasty comprises of providing clips (50) and placing around annulus by opening end points of each clip to cause it to penetrate and reduce the diameter of the tissue of the annulus. The clips are loaded in a clip delivery device (10), which pushes out a specific number of the clip at a time such both ends penetrate the tissue simultaneously.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a clip delivery device.

USE - For valve repair and replacement.

ADVANTAGE - Simplifies the operable annuloplasty by reducing/eliminating the need for cumbersome suture management and knotting.

DESCRIPTION OF DRAWING(S) - The drawing shows the sectional front view of clip delivery device.

Clip delivery device (10)

Searcher: Jeanne Horrigan
February 27, 2003
Serial 09/686729

2

Clips. (50)
pp; 29 DwgNo 3/12
Derwent Class: P11; P31
International Patent Class (Main): A01B-029/04; A61B-017/10
International Patent Class (Additional): A01C-005/06

4/7/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
014562697 **Image available**
WPI Acc No: 2002-383400/200241

Minimally invasive method involves providing a clip having two ends and placing across two tissue parts

Patent Assignee: COALESCENT SURGICAL INC (COAL-N)
Inventor: **HILL A ; NGUYEN J D ; SCHALLER L**
Number of Countries: 097 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200230295	A1	20020418	WO 2001US31709	A	20011010	200241 B
AU 200196791	A	20020422	AU 200196791	A	20011010	200254

Priority Applications (No Type Date): US 2000686004 A 20001010

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200230295	A1	E	28	A61B-017/04	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200196791 A A61B-017/04 Based on patent WO 200230295

Abstract (Basic): WO 200230295 A1

NOVELTY - The minimally invasive method comprises of providing a detachable clip (22) having two end points separated in open configuration, which are placing across two tissue parts such that each end part penetrates completely. The clip is then allowed to return to its natural closed configuration to hold the tissue parts together.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for apparatus for minimal invasive valve repair.

USE - In minimal invasive valve repair.

ADVANTAGE - Reduces the valve orifice.

DESCRIPTION OF DRAWING(S) - The drawing shows the enlarged external view of a double arm-clip.

Clip. (2,2)

pp; 28 DwgNo 2/14

Derwent Class: P31
International Patent Class (Main): A61B-017/04
International Patent Class (Additional): A61B-017/08

11/7/1

DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.
014132364 **Image available**
WPI Acc No: 2001-616575/200171

Surgical fastener, for connecting body tissues, tissue and prostheses

Searcher: Jeanne Horrigan
February 27, 2003
Serial 09/686729

3

and/or tissue and graft, comprises an openable and closable clip which contacts a biasing member

Patent Assignee: COALESCENT SURGICAL INC (COAL-N)

Inventor: DOAN N T; NGUYEN J; SCHALLER L

Number of Countries: 022 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200174254	A1	20011011	WO 2001US10501	A	20010329	200171 B
AU 200151205	A	20011015	AU 200151205	A	20010329	200209

Priority Applications (No Type Date): US 2000541397 A 20000331

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
-----------	------	-----	----	----------	--------------

WO 200174254	A1	E	58	A61B-017/08	
--------------	----	---	----	-------------	--

Designated States (National): AU CA JP

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

AU 200151205 A A61B-017/08 Based on patent WO 200174254

Abstract (Basic): WO 200174254 A1

NOVELTY - A surgical fastener (140) comprises an openable and closable clip (154) which contacts a biasing member (146). The biasing member is biased to conform to the closed configuration when in a free state. Preferably the clip comprises a spiral shaped wire having shape memory.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the manufacturing method of the surgical fastener.

USE - The multiple bias surgical fastener is used to connect body tissues, tissue and prostheses and/or tissue and graft.

ADVANTAGE - The biasing member helps the fastener to close more easily. A needle may be releasably attached to the clip.

DESCRIPTION OF DRAWING(S) - The drawing shows the surgical fastener.

surgical fastener (140)

biasing member (146)

clip (154)

pp; 58 DwgNo 1A/22

Derwent Class: P31

International Patent Class (Main): A61B-017/08

11/7/2

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

014036959 **Image available**

WPI Acc No: 2001-521172/200157

Tissue connector assembly for use in e.g. vascular surgery, minimally invasive or open surgical procedure, has two surgical clips joined together by straight bridge

Patent Assignee: DOAN N (DOAN-I); HO L (HOLL-I); NGUYEN J D (NGUY-I);

SCHALLER L (SCHA-I); THACH C (THAC-I); COALESCENT SURGICAL INC (COAL-N)

Inventor: DOAN N; HO L; NGUYEN J D; SCHALLER L; THACH C; NGUYEN J

Number of Countries: 098 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010018592	A1	20010830	US 99260623	A	19990301	200157 B
			US 2001828322	A	20010405	

WO 200280780 A1 20021017 WO 2002US10866 A 20020405 200270

Priority Applications (No Type Date): US 2001828322 A 20010405; US 99260623

Searcher: Jeanne Horrigan

February 27, 2003

Serial 09/686729

4

A 19990301

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes
US 20010018592 A1 39 A61B-017/04 CIP of application US 99260623
WO 200280780 A1 E A61B-017/08

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

Abstract (Basic): US 20010018592 A1

NOVELTY - A tissue connector assembly (11) comprises of two surgical clips (20) or fasteners joined together by a straight bridge. Each clip has an open and closed configuration. The bridge ensures spacing between the clips, when both are in closed configurations. Each clip also has a self-closing structure, and comprises of two flexible members (18,19) connecting two piercing needles (16,17).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (a) a surgical fastener;
- (b) and a surgical method to attach tissue.

USE - For connecting graft vessel to coronary artery or vein in vascular anastomosis, when used in vascular surgery. Also for joining tissues located in e.g. chest, abdominal cavity, retroperitoneal space, when used in minimally invasive or open surgical procedure.

ADVANTAGE - Facilitates threading of ends of tissue connector assembly from inner to outer wall of tissue e.g. calcified artery, while minimizing possible dislodging of material e.g. plaque, on tissue wall. Enables guiding and aligning of one tissue to another tissue during tissue alignment. Tissue connector assembly can also be used in performing horizontal mattress suture.

DESCRIPTION OF DRAWING(S) - The figure shows the isometric view of a tissue connector assembly.

Tissue connector assembly (11)
Piercing needles (16,17)
Flexible members (18,19)
Surgical clips (20)
pp; 39 DwgNo 1/20

Derwent Class: P31

International Patent Class (Main): A61B-017/04; A61B-017/08

11/7/3

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013507372

WPI Acc No: 2000-679316/200066

Apparatus for anastomosis, comprises occlusion member slidably coupled to tubular member having edge end forming opening in vessel wall, to occlude in vessel wall opening to form hemostasis area

Patent Assignee: COALESCENT SURGICAL INC (COAL-N)

Inventor: MARONEY C T; SCHALLER L

Number of Countries: 021 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200059380	A2	20001012	WO 2000US9092	A	20000405	200066 B

Searcher: Jeanne Horrigan

5

February 27, 2003

Serial 09/686729

AU 200042023 A 20001023 AU 200042023 A 20000405 200107

Priority Applications (No Type Date): US 2000540636 A 20000331; US 99127862

P 19990405

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200059380 A2 E 73 A61B-017/00

Designated States (National): AU CA JP

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU

MC NL PT SE

AU 200042023 A A61B-017/00 Based on patent WO 200059380

Abstract (Basic): WO 200059380 A2

NOVELTY - An anastomosis apparatus comprises a tubular member having an edge end forming an opening in a vessel wall, and an occlusion member (OM) slidably coupled to tubular member, occlude the vessel wall opening to form a hemostasis area.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(i) a cannula comprises a piercing member extending from a body member forming a lumen. The piercing member has a cylindrical edge to cut the tissue, and the member forms a cavity to receive the tissue;

(ii) a trocar comprises a body having a passageway extending between a proximal portion and a distal portion while changing the dimension along a longitudinal portion;

(iii) a surgical fastener cartridge comprises the tubular member slidably coupled with another tubular member, with the fastener ends engaged with respective tubular members;

(iv) performing an anastomosis while maintaining blood flow within a vessel involves positioning a cannula to extend through the vessel wall, attaching a graft to the vessel wall adjacent to the cannula while extending and removing the cannula;

(v) an occlusion device (OM) comprises 2 coaxial cylinders (CI and CII) with CI slidably positioned within CII, and having bristles with memory shapes that flare outwardly from distal end of CI (DECI), extends from DECI; and

(vi) a dual-stage release fastener comprises a clip movable between an open and a closed configurations, and a memory biased to the closed configuration. The clip has 2 portion with respective ends. 2 mechanical restraints are coupled to respective portions to bias towards the open configurations.

USE - For anastomosis like connecting tissue.

ADVANTAGE - The proximal and distal portions constructed from variety of materials are flexible to be delivered endovascularly. The shaft is flexible and stiff enough to provide sufficient column strength to push the piercing member through the vessel wall. The shaft prevents the sliding back in the opposite direction. Thus, the apparatus prevents backsliding and the movement of the disk. The piercing member retains and retrieve the tissue cut. The membrane material has strength, flexibility and bond to the expansion elements. The apparatus fixes the tissue firmly with accurate and cleaner cut.

pp; 73 DwgNo 0/21

Derwent Class: A96; P31

International Patent Class (Main): A61B-017/00

11/7/4

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

February 27, 2003

Serial 09/686729

012914989 **Image available**

WPI Acc No: 2000-086825/200007

**Tissue connector assembly for connecting tissues or tissue and grafts
e.g. in vascular anastomosis**

Patent Assignee: COALESCENT SURGICAL INC (COAL-N); DOAN N T (DOAN-I);

GANDIONCO I M (GAND-I); HO L (HOLL-I)

Inventor: DOAN N T; DREWS P; GANDIONCO I M; HO L; MARONEY C T; NGUYEN J;

SCHALLER L

Number of Countries: 086 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9962409	A1	19991209	WO 99US12563	A	19990603	200007 B
AU 9945471	A	19991220	AU 9945471	A	19990603	200021
EP 1083832	A1	20010321	EP 99928396	A	19990603	200117
			WO 99US12563	A	19990603	
US 20010047181	A1	20011129	US 99259705	A	19990301	200202
JP 2002516694	W	20020611	WO 99US12563	A	19990603	200253
			JP 2000551672	A	19990603	
US 6514265	B2	20030204	US 99259705	A	19990301	200313

Priority Applications (No Type Date): US 99259705 A 19990301; US 9890305 A 19980603

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9962409 A1 E 68 A61B-017/08

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN
CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9945471 A A61B-017/08 Based on patent WO 9962409

EP 1083832 A1 E A61B-017/08 Based on patent WO 9962409

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI
LU MC NL PT SE

US 20010047181 A1 A61B-017/08

JP 2002516694 W 77 A61B-017/11 Based on patent WO 9962409

US 6514265 B2 A61B-017/08

Abstract (Basic): WO 9962409 A1

NOVELTY - The tissue connector assembly (110) has a flexible clip (120) which includes a restraining device (124) and a locking device (128). The restraining device comprises a tubular coil spring (126) which holds the clip in an open configuration. The locking device is attached to a flexible portion (118) via a tapered sleeve (156). A needle (116) is connected to the flexible portion for connecting tissues.

DETAILED DESCRIPTION - The tubular coil spring is made of shape memory material, such as nitinol and comprises several strands which are arranged in a circle and parallel to one another. The strands comprises notches to receive and lock on enlarged portion (36). The tubular coil spring slides over a wire (134) which comprises the enlarged portion to hold the clip in an open configuration. An INDEPENDENT CLAIM is also included for method of connecting tissues and prosthesis.

USE - To connect tissues, tissues and prosthesis, tissues and grafts e.g. in vascular anastomosis, in minimal surgery for cholecystectomy and anti-reflux surgery of esophagus, stomach, etc.

ADVANTAGE - Tissue connector assembly and operative method

precisely controls and accurately places the needle for connecting tissues in anastomosis. The clip is small, thus preventing obstruction of surgeon's view of the tissue being connected and allows for precise control of the clip by the surgeon.

DESCRIPTION OF DRAWING(S) - The figure shows perspective view of tissue connector assembly.

Enlarged portion (36)
Tissue connector assembly (110)
Needle (116)
Flexible clip (120)
Restraining device (124)
Tubular coil spring (126)
Locking device (128)
Wire (134)
Tapered sleeve (156)
pp; 68 DwgNo 6/14

Derwent Class: P31; P32

International Patent Class (Main): A61B-017/08; A61B-017/11

International Patent Class (Additional): A61F-002/02

11/7/5

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012914987 **Image available**

WPI Acc No: 2000-086823/200007

Tissue connector assembly for cardiovascular surgery, thoracoscopic surgery

Patent Assignee: COALESCENT SURGICAL INC (COAL-N); GANDIONCO I M (GAND-I); GARDINER B (GARD-I); HILL A (HILL-I); HO L (HOLL-I); NGUYEN J (NGUY-I); SCHALLER L (SCHA-I)

Inventor: GANDIONCO I M; GARDINER B; HILL A; HO L; NGUYEN J; SCHALLER L

Number of Countries: 086 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9962406	A2	19991209	WO 99US12566	A	19990603	200007 B
AU 9944207	A	19991220	AU 9944207	A	19990603	200021
EP 1083831	A2	20010321	EP 99927259	A	19990603	200117
			WO 99US12566	A	19990603	
US 20020010490	A1	20020124	US 99260623	A	19990301	200210
JP 2002516693	W	20020611	WO 99US12566	A	19990603	200253
			JP 2000551669	A	19990603	

Priority Applications (No Type Date): US 99260623 A 19990301; US 9889884 A 19980603

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9962406 A2 E 80 A61B-017/03

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

AU 9944207 A A61B-017/03 Based on patent WO 9962406

EP 1083831 A2 E A61B-017/064 Based on patent WO 9962406

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

February 27, 2003

Serial 09/686729

US 20020010490 A1 A61B-017/04

JP 2002516693 W 93 A61B-017/11 Based on patent WO 9962406

Abstract (Basic): WO 9962406 A2

NOVELTY - The tissue connector assembly (10) comprises a flexible tubular structure (18) coupled with a piercing or penetrating needle (16) with a rigid sharp point (30). A surgical clip (20) is releasably attached to the tubular structure (18) by a locking mechanism (28). The surgical clip comprises a deformable wire (34) made of nickel titanium which has shape of memory alloy.

DETAILED DESCRIPTION - The releasable locking mechanism comprises a flexible tubular structure (50) with end portion and tapered sleeve (56) which is coupled to the flexible tubular structure. The end portion is releasably attached to wire. The surgical clip comprises movable portion with several stands which include a notch for receiving a spherical enlarged portion (36) which resist the coil from passing. The surgical clip has open and closed configuration, i.e. clip is in closed configuration when in a relaxed position and U-shaped when in open configuration. A restraining device (24) attaches the surgical clip (20) with the locking device (28). An INDEPENDENT CLAIM is also included for tissue connecting method using surgical clip for cardiovascular surgery, thoracoscopic surgery.

USE - For manipulating aligning and connecting tissues with another tissues and tissue with prosthesis such as vascular anastomosis during cardiovascular surgery, thoracoscopic surgery.

ADVANTAGE - The tissue connector assembly comprising penetrating needle connects tissues in a rigid position so that the vascular anastomosis can be performed with minimal invasive surgery.

DESCRIPTION OF DRAWING(S) - The figure shows the perspective view of tissue connector assembly.

Tissue connector assembly (10)
Needle (16)
Flexible tubular structure (18)
Clip (20)
Restraining device (24)
Locking mechanism (28)
Rigid sharp point (30)
Deformable wire (34)
Enlarged portion (36)
Tubular structure (50)
Tapered sleeve (56)
pp; 80 DwgNo 1/18

Derwent Class: P31

International Patent Class (Main): A61B-017/03; A61B-017/04; A61B-017/064;
A61B-017/11

International Patent Class (Additional): A61B-017/06

February 27, 2003

Serial 09/686729

File 348:EUROPEAN PATENTS 1978-2003/Feb W03

File 349:PCT FULLTEXT 1979-2002/UB=20030220,UT=20030213

Set	Items	Description
S1	21	AU='NGUYEN JOHN' OR AU='NGUYEN JOHN D'
S2	12	AU='HILL ART' OR AU='HILL ARTHUR':AU='HILL ARTHUR T'
S3	25	AU='SCHALLER LAURENT' OR AU='SCHALLER LAURENT B'
S4	6	S1 AND S2 AND S3
S5	32	S1:S3 NOT S4
S6	175007	VALVE? ? OR ANNULOPLASTY OR ANNULUS OR ANULUS
S7	41286	CLIP OR CLIPS
S8	5	S5 AND S6
S9	10	S5 AND S7
S10	3	S8 AND S9
S11	9	S8:S9 NOT S10

10/3,AB/2 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00947099

MULTIPLE LOOP TISSUE CONNECTOR APPARATUS AND METHODS

DISPOSITIF DE JONCTION DE TISSUS A BOUCLES MULTIPLES

Patent Applicant/Assignee:

COALESCENT SURGICAL INC, 559 East Weddell Drive, Sunnyvale, CA 94089, US,
US (Residence), US (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

NGUYEN John, 4053 Forestwood Drive, San Jose, CA 95121, US, US
(Residence), US (Nationality), (Designated only for: US)

SCHALLER Laurent, 595 Benvenue Avenue, Los Altos, CA 94024, US, US
(Residence), CH (Nationality), (Designated only for: US)

THACH Cong, 1806 Fumia Place, San Jose, CA 95131, US, US (Residence), US
(Nationality), (Designated only for: US)

HO Liem, 865 Central Avenue, Mountain View, CA 94043, US, US (Residence),
VN (Nationality), (Designated only for: US)

DOAN Nga, 2180 Mendota Way, San Jose, CA 95122, US, US (Residence), US
(Nationality), (Designated only for: US)

Legal Representative:

MACEY Harry J (agent), Law Office of Harry J. Macey, Suite 121, 1301
Shoreway Road, Belmont, CA 94002-4106, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200280779 A1 20021017 (WO 0280779)

Application: WO 2002US10865 20020405 (PCT/WO US0210865)

Priority Application: US 2001828335 20010405

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU
CZ (utility model) CZ DE (utility model) DE DK DM DZ EC EE (utility
model) EE ES FI (utility model) FI GB GD GE GH GM HR HU ID IL IN IS JP KE
KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT
RO RU SD SE SG SI SK (utility model) SK SL TJ TM TR TT TZ UA UG US UZ VN
YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 12743

English Abstract

A tissue connector assembly (1101) comprises a multiple loop fastener (1301) movable between an open configuration and a closed configuration and a restraining device (124c) attached to the fastener (1300) for restraining the fastener (1301) in its open configuration provides for a self-closing, multiple suture fastener. A needle (116) may be releasably attached to the fastener (1301). A method for connecting tissues is also disclosed. The method includes inserting a fastener (1301) through tissue with the fastener (1301) being biased in an open position by a restraining device (124c) secured to the fastener (1301), threading the fastener (1301) through more than one stitch, and removing the restraining device (124c) from the fastener (1301).

11/6/6 (Item 3 from file: 349)

00747516 **Image available**

APPARATUS AND METHODS FOR ANASTOMOSIS

Publication Year: 2000

11/6/9 (Item 6 from file: 349)

00305407 **Image available**

METHOD FOR DETECTING SEPARATION OF A VASOOCCLUSION DEVICE

Publication Year: 1995

11/3,AB/2 (Item 2 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

01277158

SURGICAL CLIP REMOVAL APPARATUS

APPAREIL D'EXTRACTION DE PINCES CHIRURGICALES

PATENT ASSIGNEE:

Coalescent Surgical, Inc., (2795440), 559 East Weddell Drive, Sunnyvale,
CA 94089, (US), (Applicant designated States: all)

INVENTOR:

GOLDEN, Steve, 618 Creek Drive, Menlo Park, CA 94025, (US)

HO, Liem, 865 Central Avenue, Mountain View, CA 94043, (US)

NGUYEN, John , 4053 Forest Wood, San Jose, CA 95121, (US)

PATENT (CC, No, Kind, Date):

WO 2001017441 010315

APPLICATION (CC, No, Date): EP 2000959748 000901; WO 2000US24056 000901

PRIORITY (CC, No, Date): US 152401 P 990903; US 540638 000331

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;

LU; MC; NL; PT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: A61B-017/10

LANGUAGE.(Publication,Procedural,Application): English; English; English

11/3,AB/5 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00784282

SURGICAL CLIP REMOVAL APPARATUS

APPAREIL D'EXTRACTION DE PINCES CHIRURGICALES

Patent Applicant/Assignee:

COALESCENT SURGICAL INC, 559 East Weddell Drive, Sunnyvale, CA 94089, US,
US (Residence), US (Nationality)

Searcher: Jeanne Horrigan

11

February 27, 2003

Serial 09/686729

Inventor(s):

GOLDEN Steve, 618 Creek Drive, Menlo Park, CA 94025, US,

HO Liem, 865 Central Avenue, Mountain View, CA 94043, US,

NGUYEN John , 4053 Forest Wood, San Jose, CA 95121, US

Legal Representative:

VOSEN Steven R (et al) (agent), Majestic, Parsons, Siebert & Hsue P.C.,

Suite 1100, Four Embarcadero Center, San Francisco, CA 94111-4106, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200117441 A1 20010315 (WO 0117441)

Application: WO 2000US24056 20000901 (PCT/WO US0024056)

Priority Application: US 99152401 19990903; US 2000540638 20000331

Designated States: AU CA JP

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Filing Language: English

Fulltext Word Count: 12521

English Abstract

Apparatus and methods for removing surgical fasteners. The apparatus includes a mechanism for opening the fastener so that it may be removed from, for example, tissue, prostheses or graft material.

February 27, 2003

Serial 09/686729

File 155:MEDLINE(R) 1966-2003/Feb W4

File 5:Biosis Previews(R) 1969-2003/Feb W4

File 73:EMBASE 1974-2003/Feb W3

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Feb W3

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

Set	Items	Description
S1	1	AU='NGUYEN JD'
S2	1318	AU='HILL A'
S3	299	AU='HILL A.'
S4	21	AU='HILL ARTHUR' OR AU='HILL ARTHUR C':AU='HILL ARTHUR R'
S5	18	AU='SCHALLER L' OR AU='SCHALLER L B' OR AU='SCHALLER L.' OR AU='SCHALLER LAURENT'
S6	0	S1 AND S2:S4 AND S5
S7	0	S2:S4 AND S5
S8	88532	ANNULOPLASTY OR MITRAL()VALVE? ?
S9	33985	CUFF? ?
S10	20130	CLIP OR CLIPS
S11	0	S1:S5 AND S8
S12	4	S1:S5 AND S9:S10
S13	3	RD (unique items)

13/7/2 (Item 1 from file: 5)

DIALOG(R) File 5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.

11033583 BIOSIS NO.: 199799654728

Nonpenetrating clips for coronary anastomosis.

AUTHOR: Nataf Patrick(a); Kirsch Wolff; Hill Arthur C ; Anton Toomas; Zhu Yong Hua; Ramadan Ramzi; Lima Leonardo; Pavie Alain; Cabrol Christian; Gandjbakhch Iradj

AUTHOR ADDRESS: (a)Service de Chirurgie Cardiaque, Hopital de la Pitie, 83 Bd de l'Hopital, 75013 Paris**France

JOURNAL: Annals of Thoracic Surgery 63 (6 SUPPL.):pS135-S137 1997

ISSN: 0003-4975

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: Background. A nonsuture **clip** technique (nonpenetrating titanium **clips** applied to everted tissue edges at high compressive forces) was used to perform coronary anastomoses in a clinical setting. Methods. Clipped coronary anastomoses were performed in 10 patients. The anastomoses incorporated the left internal mammary artery to the left anterior descending artery (n = 1) and the saphenous vein to the right coronary artery (n = 5), the posterior descending artery (n = 2), the diagonal artery (n = 2), and one vein-to-vein proximal anastomosis (n = 1). Results. The mean duration for completion of the anastomoses was 15 minutes (range, 7 to 20 minutes). This time was reduced from 20 minutes at the beginning of the clinical experience to 7 minutes for the last 3 patients. No technical complication was related to **clip** application and all patients had uneventful outcomes. Three anastomoses studied by coronary angiography were patent without stenosis. Conclusion. The clipped anastomotic technique has a rapid learning curve, the same safety as suture methods, and the potential for facilitating endoscopic vascular reconstructions.

February 27, 2003

Serial 09/686729

File 155:MEDLINE(R) 1966-2003/Feb W4

[search terms for this database search were lost in computer.]

14/7/2

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2003 The Dialog Corp. All rts. reserv.

08845880 96186329 PMID: 8619713

Mitral valve remodeling: long-term results with posterior pericardial annuloplasty .

Scrofani R; Moriggia S; Salati M; Fundaro P; Danna P; Santoli C

Division of Thoracic and Cardiovascular Surgery, Ospedale "L. Sacco," Milan, Italy.

Annals of thoracic surgery (UNITED STATES) Mar 1996, 61 (3) p895-9,

ISSN 0003-4975 Journal Code: 15030100R

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

BACKGROUND: We studied the long-term results of a technique of mitral **annuloplasty** using autologous pericardium. **METHODS:** Between June 1989 and December 1994, 113 mitral valvuloplasties were performed for myxomatous degenerative disease. Repair of isolated anterior leaflet prolapse was performed in 26 patients (23%), posterior leaflet prolapse in 38 (33.6%), and prolapse of both leaflets in 49 (43.4%). Posterior pericardial **annuloplasty** was performed in all patients. In 20 patients, the pericardial graft was marked with metal **clips** for postoperative cinefluoroscopic assessment of annulus motion. **RESULTS:** The operative mortality rate was 2.7% (3/113). One patient died of myocardial infarction and 2 of low cardiac output syndrome. One patient required replacement of the mitral valve 2 days after operation because of dehiscence of the annular plication. Follow-up (average length, 32.41 +/- 20.09 months; range 1 to 71 months) was 97% complete and revealed good clinical and functional results: 95 patients (84.1%) were in New York Heart Association class I and had no regurgitation or only mild residual regurgitation. Postoperative transmitral flow indices were almost normal (mitral valve area = 3.7 +/- 0.4 cm²; peak flow velocity = 1.06 +/- 0.2 m/s). Only 3 patients had reoperation within 3 years (actuarial 5-year reoperation-free rate, 89.7%) and event-free survival at 5 years was 91%. In patients with metal **clips** marking autologous pericardium, planimetry of the area derived by fluoroscopic examination showed systolic narrowing of annulus size (8.5% +/- 6.4%; p < 0.01) and a slight systolic fall in the anteroposterior diameter of the annulus contour (5.9% +/- 3.8%; p < 0.01). **CONCLUSIONS:** Posterior pericardial **annuloplasty** seems to be a safe, effective and easily performed technique and a more physiologic correction that preserves mitral annulus motion.

Record Date Created: 19960612

14/7/3

DIALOG(R) File 155:MEDLINE(R)

(c) format only 2003 The Dialog Corp. All rts. reserv.

07005145 91315813 PMID: 1859660

Posterior pericardial annuloplasty : a physiological correction?

Salati M; Scrofani R; Santoli C

Department of Thoracic and Cardiovascular Surgery, Luigi Sacco Hospital, Milan, Italy.

European journal of cardio-thoracic surgery : official journal of the
European Association for Cardio-thoracic Surgery (GERMANY) 1991, 5 (5)
p226-9; discussion 229, ISSN 1010-7940 Journal Code: 8804069

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Since the introduction of the **annuloplasty** ring, many attempts have been made to obtain a flexible ring that preserves the physiological motion of the mitral annulus. We experimented with a new technique using autologous pericardium to construct a more flexible ring. Twenty patients underwent mitral valve repair for degenerative disease and were treated by a posterior pericardial **annuloplasty** and the usual valvuloplasty procedures. A long strip of pericardium was prepared, marked with metal **clips** and rolled up in a tubular fashion with the serosal surface on the outside. The pericardial tube was apposed on the posterior annulus just beyond the commissures. No patient required early or late reoperation. Doppler analysis showed good valve function: 18 patients had no or mild, and 2 had moderate regurgitation. Transmitral flow indexes were nearly normal (MVA = 3.7 ± 0.4 cm²; flow velocity peak = 1.06 ± 0.2 m/s). Fluoroscopic examination was employed for assessing annular motion using the metal **clips** as radiopaque markers. Planimetry of the hemiarea showed a mild narrowing (mean 8.5% \pm 6.4%) of annular size during ventricular systole. There was a trend toward a systolic reduction of the anteroposterior diameter of the annulus. These findings demonstrate that the mitral orifice preserves its flexible properties after this type of **annuloplasty**. Posterior pericardial **annuloplasty** seems to be a physiological correction of annular dilatation in patients with degenerative disease.

Record Date Created: 19910830

February 27, 2003

Serial 09/686729

File 155:MEDLINE(R) 1966-2003/Feb W4

File 5:Biosis Previews(R) 1969-2003/Feb W4

File 73:EMBASE 1974-2003/Feb W4

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Feb W3

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

File 144:Pascal 1973-2003/Feb W3

File 6:NTIS 1964-2003/Feb W4

File 8:EI Compendex(R) 1970-2003/Feb W2

File 99:Wilson Appl. Sci & Tech Abs 1983-2003/Jan

File 65:Inside Conferences 1993-2003/Feb W4

File 94:JICST-EPlus 1985-2003/Feb W4

File 35:Dissertation Abs Online 1861-2003/Feb

Set	Items	Description
S1	58503	ANNULOPLASTY OR VALVE? ?(3N)REPLAC?
S2	2448392	ARTERY OR ARTERIES OR ARTERIAL OR AORTA OR VALVE? ?
S3	47019	CLIP OR CLIPS OR CLASP OR CLASPS OR ARMCLIP? ? OR FASTENER??
S4	41926	CUFF? ?
S5	109	S1:S2 AND S3 AND S4
S6	22	S1:S2(5N)S4(10N)S3
S7	8	S6/2003 OR S6/2002 OR S6/2001
S8	14	S6 NOT S7
S9	11	RD (unique items)
S10	98	SEWING()CUFF
S11	2	S3 AND S10
S12	0	S11 NOT S6

9/7/3 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.

12678608 BIOSIS NO.: 200000432110

Means and method of replacing a heart valve in a minimally invasive manner.

AUTHOR: Williamson Warren; Spence Paul A; Christakis George T(a); Ward Thomas J; DiNovo Dominic P; Keller George A; Robinson Cecil R; VanHoose E Dale

AUTHOR ADDRESS: (a)Toronto**Canada

JOURNAL: Official Gazette of the United States Patent and Trademark Office
Patents 1232 (4):pNo pagination Mar. 28, 2000

MEDIUM: e-file

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: A heart valve can be replaced using minimally invasive methods which include a sutureless sewing cuff that and a fastener delivery tool that holds the cuff against the patient's tissue while delivering fasteners, two at a time to attach the cuff to the tissue from the inside-out. The tool stores a plurality of fasteners. Drawstrings are operated from outside the patient's body and cinch the sewing cuff to the valve body. The cuff is releasably mounted on the tool and the tool holds the cuff against tissue and drives the fastener through the cuff and the tissue before folding over the legs of the fastener whereby secure securement between the cuff and the tissue is assured. At least two rows of staggered fasteners are formed whereby fasteners are located continuously throughout the entire circumference of the cuff. A minimally invasive surgical method is disclosed, and a method and tool are disclosed for repairing abdominal aortic aneurysms in a minimally invasive manner.

9/7/6 (Item 1 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

11541875 PASCAL No.: 94-0422397

Acute phase vascular endothelial injury : a comparison of temporary arterial occlusion using an endovascular occlusive balloon catheter versus a temporary aneurysm clip in a pig model. Comments

MACDONALD J D; GYORKE A; JACOBS J M; FAZAL MOHAMMAD S; SUNDERLAND P M; REICHMAN M V; MAYBERG M R; SELMAN W R

Univ. Utah health sci. cent., dep. neurosurgery, Salt Lake City UT, USA

Journal: Neurosurgery, 1994, 34 (5) 876-881

ISSN: 0148-396X CODEN: NRSRDY Availability: INIST-18396;
354000045471710140

No. of Refs.: 43 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: USA

Language: English

We compared the degree of acute endothelial injury after temporary vessel occlusion using two different occlusion modalities-external clipping and endovascular balloon occlusion. The common carotid and subclavian arteries in eight weanling pigs were temporarily occluded with either a 5 Fr occlusion balloon catheter or a temporary microvascular clip for 0 (control), 5, 10, and 30 minutes. Two animals (eight vessels; four clip and four balloon occluded) were used at each time interval. Segments of each experimental vessel were harvested and analyzed by scanning electron microscopy

9/7/7 (Item 2 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

11021181 PASCAL No.: 93-0530687

Transcranial clipping of recurrent cerebral aneurysms after endovascular treatment

LADOUCEUR D L

Cent. hosp. univ. Sherbrooke, dep. neurosurgery, Sherbrooke PQ J1H 5N4, Canada

Journal: Stroke : (1970), 1993, 24 (7) 1087-1089

ISSN: 0039-2499 CODEN: SJCCA7 Availability: INIST-4004;
354000034667040260

No. of Refs.: 6 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: USA

Language: English

Background and Purpose: Treatment of intracranial aneurysms by interventional neurovascular techniques may be useful as therapeutic alternative. We describe two cases of recurrent aneurysms after endovascular treatment using detachable balloons. Case Description: Two cases are reported of recurrence 2 years after endovascular treatment of cerebral aneurysms (posterior communicating in both cases). One patient had a subarachnoid hemorrhage after rupture of a posterior communicating aneurysm

9/7/9 (Item 4 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

04944517 PASCAL No.: 83-0194586

Management of large and giant aneurysms

SENGUPTA R P

Newcastle gen. hosp., Newcastle upon Tyne NE4 6BE, United Kingdom

Journal: Neurosurgical review, 1982, 5 (4) 173-178

ISSN: 0344-5607 Availability: CNRS-17944

No. of Refs.: 7 ref.

Document Type: P (Serial) ; A (Analytic)

Country of Publication: Federal Republic of Germany

Language: English

Methodes preferees: obliteration du cou avec ou sans resection du sac;
occlusion du sac par des clips multiples; occlusion proximale avec
anastomose arterielle extra-intracranienne

9/7/10 (Item 5 from file: 144)

DIALOG(R) File 144:Pascal

(c) 2003 INIST/CNRS. All rts. reserv.

02776575 PASCAL No.: 80-0308780

TREATMENT OF VERTEBRO-BASILAR ANEURYSMS

PIA H W

NEUROCHIR. UNIV.-KLIN., GIESSEN, FEDERAL REPUBLIC OF GERMANY

Journal: NEUROSURG. REV., 1979, 2 (2) 55-65

Availability: CNRS-17944

No. of Refs.: 62 REF.

Document Type: P (SERIAL) ; A (ANALYTIC)

Country of Publication: FEDERAL REPUBLIC OF GERMANY

Language: ENGLISH Summary Language: GERMAN

MICROCHIRURGIE. INTERET DE LA VOIE D'ABORD CAVITE BUCCALE, CLIVUS.
DISSECTION ELECTROTHERMIQUE. EMBOLISATION PAR BALLONNET GONFLABLE PLUTOT
QU'UNE INTERVENTION DIRECTE OU INDIRECTE RISQUEE

11/7/1 (Item 1 from file: 5)

DIALOG(R) File 5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.

13760329 BIOSIS NO.: 200200389150

Means and method of replacing a heart valve in a minimally invasive manner.

AUTHOR: Williamson Warren P IV(a); Spence Paul A; Chistakis George T; Ortiz
Mark V

AUTHOR ADDRESS: (a)Loveland, OH**USA

JOURNAL: Official Gazette of the United States Patent and Trademark Office
Patents 1259 (2):pNo Pagination June 11, 2002

MEDIUM: e-file

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: A heart valve can be replaced using minimally invasive methods
which include a sutureless **sewing cuff** that and a **fastener** delivery
tool that holds the cuff against the patient's tissue while delivering
fasteners to attach the cuff to the tissue from the inside out. The tool
stores a plurality of **fasteners** and is self-contained whereby a
fastener is delivered and placed all from inside a vessel. The
fasteners are self-forming whereby they do not need an anvil to be
formed. Anchor elements are operated from outside the patient's body to
cinch a prosthesis to an anchoring cuff of the valve body. The cuff is

February 27, 2003

Serial 09/686729

releasably mounted on the tool and the tool holds the cuff against tissue and drives the **fastener** through the cuff and the tissue before folding over the legs of the **fastener** whereby secure securement between the cuff and the tissue is assured. **Fasteners** are placed and formed whereby **fasteners** are located continuously throughout the entire circumference of the cuff. A minimally invasive surgical method is disclosed, and a method and tool are disclosed for repairing abdominal aortic aneurysms in a minimally invasive manner. **Fasteners** that are permanently deformed during the process of attaching the cuff are disclosed as are **fasteners** that are not permanently deformed during the attaching process.

February 27, 2003

Serial 09/686729

File 95:TEME-Technology & Management 1989-2003/Feb W2
 File 98:General Sci Abs/Full-Text 1984-2003/Jan
 File 9:Business & Industry(R) Jul/1994-2003/Feb 26
 File 16:Gale Group PROMT(R) 1990-2003/Feb 26
 File 160:Gale Group PROMT(R) 1972-1989
 File 148:Gale Group Trade & Industry DB 1976-2003/Feb 26
 File 621:Gale Group New Prod.Annou.(R) 1985-2003/Feb 26
 File 149:TGG Health&Wellness DB(SM) 1976-2003/Feb W2
 File 636:Gale Group Newsletter DB(TM) 1987-2003/Feb 26
 File 441:ESPICOM Pharm&Med DEVICE NEWS 2003/Feb W4
 File 20:Dialog Global Reporter 1997-2003/Feb 27
 File 442:AMA Journals 1982-2003/Jun B1
 File 444:New England Journal of Med. 1985-2003/Mar W1

Set	Items	Description
S1	8560	ANNULOPLASTY OR VALVE? ?(3N)REPLAC?
S2	337806	ARTERY OR ARTERIES OR ARTERIAL OR AORTA OR VALVE? ?
S3	204944	CLIP OR CLIPS OR CLASP OR CLASPS OR ARMCLIP? ? OR FASTENER? ?
S4	28993	CUFF? ?
S5	65	S1 AND S2(S)S3
S6	0	S4(S)S3 AND S5
S7	3	S5 AND S4
S8	3	RD (unique items)
S9	68	SEWING()CUFF? ?
S10	0	S3(S)S9
S11	1	S3 AND S9
S12	62	S5 NOT (S8 OR S11)
S13	43	RD (unique items)
S14	11	S13/2003 OR S13/2002 OR S13/2001
S15	32	S13 NOT S14

8/8/3 (Item 1 from file: 20)

DIALOG(R)File 20:(c) 2003 The Dialog Corp. All rts. reserv.
 07045959 (USE FORMAT 7 OR 9 FOR FULLTEXT)

Her tiny heart is frozen

September 06, 1999

WORD COUNT: 1093

DESCRIPTORS: Health & Healthcare; General News; Research & Development;
 Company News; Comment & Analysis

COUNTRY NAMES/CODES: Russia (RU)

REGIONS: Commonwealth of Independent States; Former USSR

SIC CODES/DESCRIPTIONS: 8731 (Commercial Physical Research)

11/6/1 (Item 1 from file: 149)

DIALOG(R)File 149:TGG Health&Wellness DB(SM)

(c) 2003 The Gale Group. All rts. reserv.

01745152 SUPPLIER NUMBER: 20202614 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Left ventricular assist as a viable alternative for cardiac
 transplantation. (Advances in Cardiovascular Interventions)**

15/8/22 (Item 3 from file: 149)

DIALOG(R)File 149:(c) 2003 The Gale Group. All rts. reserv.

01356717 SUPPLIER NUMBER: 12206755 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Stroke prevention. (includes related articles)

1992

WORD COUNT: 4295 LINE COUNT: 00368

February 27, 2003

Serial 09/686729

SPECIAL FEATURES: illustration; table; diagram

DESCRIPTORS: Stroke (Disease)--Prevention; Brain--Wounds and injuries;

Patient education--Usage; Carotid artery--Surgery; Aspirin--Therapeutic use

15/3,AB,K/3 (Item 3 from file: 16)

DIALOG(R)File 16:Gale Group PROMT(R)

(c) 2003 The Gale Group. All rts. reserv.

07450986 Supplier Number: 62663814

Edwards Lifesciences Receives FDA Clearance for Thrombex PMT Clot Removal System for Hemodialysis Access Grafts.

PR Newswire, pNA

June 12, 2000

Language: English Record Type: Fulltext

Document Type: Newswire; Trade

Word Count: 793

... is part of Edwards Lifesciences' family of vascular products that includes the Fogarty line of **Arterial** Embolectomy, guidewire-compatible Thru-Lumen Embolectomy, Adherent Clot and Graft Thrombectomy catheters. Additionally, Edwards' Lifespan ePTFE Grafts, Fogarty Surgical Spring **Clips** and Inserts for atraumatic occlusion, and its line of visualization products, provide clinicians with a...

...care, vascular systems and perfusion products and services, and is a worldwide leader in tissue **replacement** heart **valves** and heart valve repair products. With pro forma sales of more than \$800 million in...

15/3,AB,K/20 (Item 1 from file: 149)

DIALOG(R)File 149:TGG Health&Wellness DB(SM)

(c) 2003 The Gale Group. All rts. reserv.

01678755 SUPPLIER NUMBER: 19150045 (USE FORMAT 7 OR 9 FOR FULL TEXT)

A gentler approach to heart surgery: after decades of running bone saws through rib cages, surgeons are finding less invasive ways to do their work.

Cowley, Geoffrey; Underwood, Anne

Newsweek, v129, n9, p73(1)

March 3, 1997

PUBLICATION FORMAT: Magazine/Journal ISSN: 0028-9604 LANGUAGE: English

RECORD TYPE: Fulltext; Abstract TARGET AUDIENCE: Consumer

WORD COUNT: 746 LINE COUNT: 00063

ABSTRACT: Physicians are pioneering new methods of operating on cardiac patients that reduces pain and recovery times. Atlanta, GA, surgeon William Mayfield makes keyhole incisions instead of making a foot-long cut. He uses special instruments that fit into the small opening.

... them through blood vessels in the neck and groin. Once those connections are made, many **valve** and **artery** repairs can be performed through a three-inch incision over the heart. At most, the surgeons may slip a few probes between the ribs or **clip** a small piece of one rib.

Stopping the heart may enhance a surgeon's control...

...year. At the New York University Medical Center, surgeons are already using it to perform **valve** **replacements** and multiple-vessel bypass operations...

15/3,partial KWIC/21 (Item 2 from file: 149)

DIALOG(R)File 149:TGG Health&Wellness DB(SM)

(c) 2003 The Gale Group. All rts. reserv.

01672170 SUPPLIER NUMBER: 19163363 (USE FORMAT 7 OR 9 FOR FULL TEXT)

Right thoracotomy approach to mitral valve surgical procedures. (home study program includes examination, answer sheet and learner evaluation)

Coulson, Alan S.; Quarnstrom, Judy A.; Holmes, Katrina; Henry, JoAnn
AORN Journal, v65, n2, p345(20)
Feb, 1997

PUBLICATION FORMAT: Magazine/Journal ISSN: 0001-2092 LANGUAGE: English

RECORD TYPE: Fulltext TARGET AUDIENCE: Professional; Trade

WORD COUNT: 8883 LINE COUNT: 00751

... they are good candidates for surgery, several surgical techniques may be used to repair or **replace** their stenotic mitral **valves**.

Surgeons may perform closed commissurotomy procedures by finger dilations of the mitral valve to separate...

...mitral commissures and minimal calcification of their leaflets. If commissurotomy procedures are not successful, prosthetic **valve replacement** procedures usually are necessary. (14)

Valvuloplasty procedures (ie, surgical reconstructions of mitral valve leaflets, chordae...medically with digoxin, diuretics, and vasodilator medications. Whenever possible, surgeons perform mitral valve repairs and **annuloplasty** procedures (ie, repairs of incompetent valve rings or annuli, tightening and suturing of annuli on patients, **replacing** patients, mitral **valves** only as necessary. Indications for **annuloplasty** procedures include

- *congestive heart failure,

- *progressive cardiac enlargement,

- *acute onset of mitral insufficiency from ruptured...

...THE MITRAL VALVE

Cardiac surgeons for many years used the right thoracotomy approach for mitral **valve** repairs and **replacements**. In the late 1960s, however, the median sternotomy approach to open heart surgical procedures became...
...extreme distortion of the ascending aorta and aortic semilunar valve.

In cases of reoperation and **replacement** of mitral **valves** for a second or third time, dense adhesions from previous surgical procedures make it difficult...

...obtain good exposures through the median sternotomy approach. Also, if patients have undergone previous aortic **valve replacements**, it may be difficult to visualize their mitral valves because the anterior portion of the...artery bypass grafts (eg, mammary artery grafts) and valve prostheses (ie, mitral, tricuspid, aortic semilunar **valve replacements**) are less likely to be injured than during median sternotomy. Cardiac tamponade also is less...

...suture needles onto needle holders.

MITRAL VALVE REPAIR PROCEDURES

Mitral valve repairs, rather than mitral **valve replacements**, are preferable for several reasons. Patients' own tissues are retained, anticoagulation therapy is avoided, and...

...contract. Sometimes the chordae tendineae need to be shortened or repaired. Most often, surgeons place **annuloplasty** rings around patients, mitral annuli. These rings reduce the mitral annuli back to their normal...

...for CPB through their femoral arteries, especially if these patients have undergone previous aortic semilunar **valve replacements** or coronary artery bypass grafts. On some occasions, we cannulate patients, aortas through their right...other circulating nurse performs the initial surgical counts with the scrub person.

If a tricuspid **valve** repair or **replacement** is planned, the anesthesia care provider pulls the pulmonary artery catheter back into the superior...the pericardium.

The surgeon marks the cut edges of the dissected muscles with

hemostatic suture **clips** so that the muscles can be reapproximated at the end of surgery. There is a...
...difficult to get a completely accurate reapproximation unless the surgeon marks the muscles with suture **clips**. The surgeon places traction stitches on the pericardial margins to expose the right and left atria, **aorta**, superior and inferior vena cava, and right pulmonary **artery** and vein and to retract the lungs from the surgical field. The surgeon must maintain....

15/3,AB,K/25 (Item 3 from file: 636)

DIALOG(R) File 636:Gale Group Newsletter DB(TM)

(c) 2003 The Gale Group. All rts. reserv.

03215620 Supplier Number: 46594017

Rapid advances in minimally invasive heart surgery field offer huge market opportunities Driven by reduced trauma and lower costs, new technologies attract interest

The BBI Newsletter, v19, n8, pN/A

August 1, 1996

Language: English Record Type: Fulltext

Document Type: Newsletter; Trade

Word Count: 2489

... activities and, most importantly, lower overall health care costs. Coronary artery bypass grafts (CABG) and **valve replacements** are among the most expensive surgical procedures, with total charges ranging from \$35,000 to...

...opportunity is huge. In 1995, there were about 625,000 CABGs and 225,000 heart **valve replacement** procedures performed worldwide; CABG procedures are divided roughly 50/50 between the U.S. and overseas, while about 55% of the **valve replacements** procedures occur outside the U.S. There were approximately 850,000 coronary balloon angioplasty cases...

...surgery and also to be capable of virtually all open-heart procedures. In addition, heart **valve repairs** and **replacements** cannot be undertaken unless the heart is arrested. It is for this reason that one...completed about 60 cases worldwide (about half in the U.S.), including about 30 mitral **valve replacements** and 30 single-vessel revascularizations, with improving results as surgeons gain experience.

The beating heart...has been actively working in that area and at the Minneapolis meeting introduced its VCS Clip Applier System for achieving rapid and successful vascular hemostasis. USSC will likely introduce several new...

15/3,AB,K/29 (Item 1 from file: 442)

DIALOG(R) File 442:AMA Journals

(c) 2003 Amer Med Assn. -FARS/DARS apply. All rts. reserv.

00043629

Copyright (C) 1988 American Medical Association

The Orthograde Venous Autograft and Allograft; Presidential Address (PAPERS READ BEFORE THE 14TH ANNUAL MEETING OF THE NEW ENGLAND SOCIETY FOR VASCULAR SURGERY, BRETTON WOODS, NH, SEPT 10 TO SEPT 11, 1987)

DONOVAN, THOMAS J.

Archives of Surgery

October, 1988; 123: 1191-11951988;

LINE COUNT: 00237 WORD COUNT: 03284

... glutaraldehyde-preserved heterografts in children and also demonstrate superior function and durability in adult aortic **valve replacements**.

(Ref. 3,13,15) Immunomodulation may further improve them.

Figure 2 exemplifies the early frozen... hemoclips on one ligated branch is helpful on follow-up arteriograms, as is the small clip at uncut valve sites on the reversed grafts for diagnosing diaphragmatic or funnel-type stenoses that can appear...

15/3,K/30 (Item 2 from file: 442)

DIALOG(R)File 442:AMA Journals

(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.
00039144

Copyright (C) 1982 American Medical Association

Status of Vein Valve Transplant After 12 Months (ORIGINAL ARTICLES)

TAHERI, SYDE A.; LAZAR, LOUIS; ELIAS, STEVEN

Archives of Surgery

October, 1982; 117: 1313-13171982;

LINE COUNT: 00186 WORD COUNT: 02572

...Fig 2) is exposed, and a 2-cm segment of brachial vein that contains the **valve** is tested for patency and competency and removed. A segment of the superficial femoral vein 4 cm below the profunda femoris vein is excised, and the brachial vein, including the **valve**, is interposed into the superficial femoral vein (Fig 3). The distal anastomosis is made using three 7-0 or 8-0 monofilament sutures that are placed around the **valve** at 120 degrees intervals. The two veins are then sutured together with continuous everting sutures...

... carefully approximated with continuous sutures with caution not to involve the posterior wall. The transplanted **valve** is placed 4 ... profunda vein so as to direct blood from the profunda system cephalad. Also, four metal clips are added to the vein valve segment: two distally and two proximally for postoperative measurement of the diameter of the vein...follow-up ascending and descending venography that has shown patent deep venous systems and competent **valves**. In conjunction with the ascending and descending venography, a roentgenogram of the leg is used to evaluate the distance between the paired metal **clips**. No significant change in the distance of the **clips** has been noted. Most importantly, the ulcers of all patients have healed, and all patients...

15/3,partial KWIC/31 (Item 3 from file: 442)

DIALOG(R)File 442:AMA Journals

(c)2003 Amer Med Assn -FARS/DARS apply. All rts. reserv.
00037563

Copyright (C) 1985 American Medical Association

Pathology of Surgically Excised Mitral Valves; One Hundred Consecutive Cases (ORIGINAL ARTICLE)

HANSON, TIMOTHY P.; EDWARDS, BROOKS S.; EDWARDS, JESSE E.

Archives of Pathology and Laboratory Medicine

September, 1985; 109: 823-8281985;

LINE COUNT: 00227 WORD COUNT: 03134

...cause of it.

In each of the cases with noninfected ruptured chordae, features of mitral **valve** prolapse were identifiable. Ends of ruptured chordae were either bulbous or tapered, but frequently one...

... on one hand, and an intact chorda that had been cut during removal of the **valve** at operation, on the other. To identify ruptured chordae, the surgeons had placed a metal clip across the base of the chorda or chordae that had been found ruptured at the time that the valve was inspected and

February 27, 2003

Serial 09/686729

while still in situ (Fig 3). Additionally, for the cases with myxomatous valve the operative reports were reviewed with particular references as to the matter of chordal rupture...

15/3,AB,K/32 (Item 1 from file: 444)

DIALOG(R)File 444:New England Journal of Med.

(c) 2003 Mass. Med. Soc. All rts. reserv.

00105796

Copyright 1989 by the Massachusetts Medical Society

Weekly Clinicopathological Exercises: Case 13-1989: A 76-Year-Old Woman With Multiple Bone Lesions And Thrombocytopenia (Case Records of the Massachusetts General Hospital)

Brower, Thomas D.; Rosenberg, Andrew E.

The New England Journal of Medicine

Mar 30, 1989; 320 (13),pp 854-860

LINE COUNT: 00472

WORD COUNT: 06523

TEXT

...the age of 40 years, and she underwent a cholecystectomy in her 50s; a mitral- valve replacement , with installation of a porcine valve, was performed 5 years before entry. She noticed occasional...calcification at the right apex; the heart was not enlarged; the thoracic portion of the aorta was tortuous and unfolded. X-ray films of the right femur disclosed two sclerotic foci...

...along the Right Medial Iliac Wing with a Sclerotic Lesion Lateral to It. A surgical clip and a small metallic wire are evident in the sclerotic area related to the previous...

February 27, 2003

Serial 09/686729

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200313

File 347:JAPIO Oct 1976-2002/Oct(Updated 030204)

File 371:French Patents 1961-2002/BOPI 200209

Set	Items	Description
S1	1997	ANNULOPLASTY OR VALVE? ?(3N)REPLAC?
S2	757059	ARTERY OR ARTERIES OR ARTERIAL OR AORTA OR VALVE? ?
S3	153602	CLIP OR CLIPS OR CLASP OR CLASPS OR ARMCLIP? ? OR FASTENER? ?
S4	7654	CUFF? ?
S5	5	S1 AND S2 AND S3 AND S4
S6	230213	ANNULUS OR ANNULAR OR ANULUS OR ANULAR
S7	1060	S3(10N)S6
S8	2	S4(10N)S7
S9	2	S8 NOT S5
S10	559	IC=A01B-029/04
S11	0	A61B-017
S12	1268	IC=A01C-005/06
S13	55617	IC=A61B-017
S14	2935	S3 AND (S10 OR S12 OR S13)
S15	956	S3(10N)S1:S2
S16	66	S14 AND (S7 OR S15)
S17	44	S14 AND S15
S18	2	S7 AND S14 AND S15
S19	2	S18 NOT (S5 OR S9)

5/7/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv..

014196553 **Image available**

WPI Acc No: 2002-017250/200202

Means and method of replacing a heart valve in a minimally invasive surgical procedure

Patent Assignee: CHISTAKIS G T (CHIS-I); ORTIZ M (ORTI-I); SPENCE P A (SPEN-I); WILLIAMSON W P (WILL-I); CARDIOVASCULAR TECHNOLOGIES LLC (CARD-N)

Inventor: CHISTAKIS G T; ORTIZ M; SPENCE P A; WILLIAMSON W P

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20010044656	A1	20011122	US 96606343	A	19960223	200202 B
			US 97802948	A	19970221	
			US 97964026	A	19971104	
			US 99306448	A	19990506	
US 6402780	B2	20020611	US 96606343	A	19960223	200244
			US 97802948	A	19970221	
			US 97964026	A	19971104	
			US 99306448	A	19990506	

Priority Applications (No Type Date): US 99306448 A 19990506; US 96606343 A 19960223; US 97802948 A 19970221; US 97964026 A 19971104

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010044656	A1		67	A61F-002/24	CIP of application US 96606343 CIP of application US 97802948 CIP of application US 97964026 CIP of patent US 5716370 CIP of patent US 6042607
US 6402780	B2			A61F-002/24	CIP of application US 96606343

CIP of application US 97802948
CIP of application US 97964026
CIP of patent US 5716370
CIP of patent US 6042607

Abstract (Basic): US 20010044656 A1

NOVELTY - A multipart prosthesis for **replacing** a heart **valve** in a minimally invasive procedure includes a flexible sewing **cuff** (19) made from DACRON (RTM) material secured to the annulus of the **aorta** by **fastening staples** (23a) and (24b) and a prosthesis **valve** body (20) secured to the **cuff** by drawstrings (27,28). An indicating means (25) such as a garter spring is used to indicate to the surgeon when the heart body is properly located in the **cuff**. A **fastener** delivery tool holds the **cuff** against the patient's tissue while delivering and securing **fasteners** to attach the **cuff** to the tissue from the inside out. The tool stores the **fasteners**, which are self-forming, and releasably holds the **cuff** whilst it is deployed. Various alternative tools and methods are also disclosed.

USE - Used for **replacing** a heart **valve** in a minimally invasive surgical procedure.

ADVANTAGE - Dispenses with suture knots and felt pledgets, reducing the risk of stroke and infection post-surgery, and allowing lower doses of anticoagulant and antibiotics post surgery.

DESCRIPTION OF DRAWING(S) - The drawing shows a sectional view of the **cuff** and prosthesis **valve** installed in the aortic annulus of a patient.

Flexible sewing **cuff** (19)
Prosthesis **valve** body (20)
Staples (23a)
Staples (24b)
Garter spring (25)
Drawstrings (27,28)
pp; 67 DwgNo 2/69

Derwent Class: P32

International Patent Class (Main): A61F-002/24

5/7/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

011456907 **Image available**

WPI Acc No: 1997-434814/199740

Heart valve replacement method caused - involves implanting using surgical procedure using fastener to fastener cuff to patient prior to positioning of valve

Patent Assignee: CHRISTAKIS G T (CHRI-I); DINOVO D P (DINO-I); KELLER G A (KELL-I); ROBINSON C R (ROBI-I); SPENCE P A (SPEN-I); VAN HOOSE E D (VHOO-I); WARD T J (WARD-I); WILLIAMSON W P (WILL-I); CHIRISTAKIS G T (CHIR-I); SPENSE P A (SPEN-I); WILLIAMSON W (WILL-I)

Inventor: CHRISTAKIS G T; DINOVO D P; KELLER G A; ROBINSON C R; SPENCE P A; VAN HOOSE E D; WARD T J; WILLIAMSON W P; CHIRISTAKIS G T; VAN HOOSE D E; SPENSE P A; WILLIAMSON W

Number of Countries: 026 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9730659	A1	19970828	WO 97US2154	A	19970221	199740 B
AU 9719562	A	19970910	AU 9719562	A	19970221	199802
US 5716370	A	19980210	US 96606343	A	19960223	199813

February 27, 2003

Serial 09/686729

EP 883387	A1	19981216	EP 97907597	A	19970221	199903
			WO 97US2154	A	19970221	
BR 9707697	A	20000104	BR 977697	A	19970221	200019
			WO 97US2154	A	19970221	

Priority Applications (No Type Date): US 96606343 A 19960223

Cited Patents: US 3657744

Patent Details:

Patent No.	Kind	Lang	Pg	Main IPC	Filing Notes
------------	------	------	----	----------	--------------

WO 9730659	A1	E	87	A61F-002/24	
------------	----	---	----	-------------	--

Designated States (National): AU BR CA IL JP KR NO

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

AU 9719562	A		A61F-002/24	Based on patent WO 9730659
------------	---	--	-------------	----------------------------

US 5716370	A	32	A61B-017/08	
------------	---	----	-------------	--

EP 883387	A1	E	A61F-002/24	Based on patent WO 9730659
-----------	----	---	-------------	----------------------------

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

BR 9707697	A		A61F-002/24	Based on patent WO 9730659
------------	---	--	-------------	----------------------------

Abstract (Basic): WO 9730659 A

The method inclines making an incision 200 in the patient's suprasternal notch below the manubrium, then defining a second incision in the patient in the area of the patient's first and second ribs exposing the aortic arch. Then defining an incision across the patient's **aorta** above the annulus, and removing the patient's heart **valve** from the **aorta**.

Then releasably attaching a sewing **cuff** to a **fastener** delivery device, inserting the **fastener** delivery device through the transverse incision, fastening the **cuff** to the patient's **aorta** and removing the **fastener** delivery device from the patients body. Then positioning a prosthesis **valve** body adjacent to the **cuff**, and attaching the prosthesis **valve** body to the **cuff**, a closing all of the incisions.

ADVANTAGE - Closes the aortomy in an efficient and effective manner.

Dwg.19A/56

Abstract (Equivalent): US 5716370 A

The method inclines making an incision 200 in the patient's suprasternal notch below the manubrium, then defining a second incision in the patient in the area of the patient's first and second ribs exposing the aortic arch. Then defining an incision across the patient's **aorta** above the annulus, and removing the patient's heart **valve** from the **aorta**.

Then releasably attaching a sewing **cuff** to a **fastener** delivery device, inserting the **fastener** delivery device through the transverse incision, fastening the **cuff** to the patient's **aorta** and removing the **fastener** delivery device from the patients body. Then positioning a prosthesis **valve** body adjacent to the **cuff**, and attaching the prosthesis **valve** body to the **cuff**, a closing all of the incisions.

ADVANTAGE - Closes the aortomy in an efficient and effective manner.

Dwg.19b/30

Derwent Class: P31; P32

International Patent Class (Main): A61B-017/08; A61F-002/24

9/7/1 (Item 1 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

February 27, 2003

Serial 09/686729

007239316

WPI Acc No: 1987-236324/198734

Blood vessel connector for macro and micro-surgery - has cuff and ring clip securing ends of both blood vessels

Patent Assignee: EULER E (EULE-I)

Inventor: WILKER D

Number of Countries: 012 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3605306	A	19870820	DE 3605306	A	19860219	198734 B
WO 8704915	A	19870827	WO 87EP93	A	19870218	198735
EP 263122	A	19880413	EP 87901451	A	19870218	198815

Priority Applications (No Type Date): DE 3605306 A 19860219

Cited Patents: 1.Jnl.Ref; DE 1957855; DE 2101284; DE 3118484; EP 154103; US 2453056; US 3254650; US 3435823; US 3620218; US 4112944; US 4519392

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
-----------	------	-----	----	----------	--------------

DE 3605306	A		6		
------------	---	--	---	--	--

WO 8704915	A	G			
------------	---	---	--	--	--

Designated States (National): US

Designated States (Regional): AT BE CH DE FR GB IT LU NL SE

EP 263122	A	G			
-----------	---	---	--	--	--

Designated States (Regional): AT BE CH DE FR GB IT LI LU NL SE

Abstract (Basic): DE 3605306 A

The device uses an annular cuff with an inner dia. corresponding to the outer dia. of at least one of the blood vessels. The outer surface of the cuff receives the folded over end of the inserted blood vessel and the widened end of the second blood vessel, which are held in place by an outer ring clip.

The **annular cuff** and the ring **clip** are both made of a self-dissolving material. The outer surface of the cuff may be ribbed and its point end pref. has a conical taper for assisting reception of the widened blood vessel end.

USE - For joining blood vessels with dia. between 1 and 2 mm.

1/5

Derwent Class: P31

International Patent Class (Additional): A61B-017/11

19/7/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

014821554 **Image available**

WPI Acc No: 2002-642260/200269

Mitral valve annulus constricting device comprises resilient clip for exerting inward pressure on mitral valve annulus when placed in the coronary sinus of human heart

Patent Assignee: ALFERNESS C A (ALFE-I); KAYE D M (KAYE-I); CARDIAC

DIMENSIONS INC (CARD-N)

Inventor: ALFERNESS C A; KAYE D M

Number of Countries: 098 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020087173	A1	20020704	US 2000751271	A	20001228	200269 B
WO 200253206	A2	20020711	WO 2001US50860	A	20011227	200269

Priority Applications (No Type Date): US 2000751271 A 20001228

Patent Details:

February 27, 2003

Serial 09/686729

Patent No Kind Lan Pg Main IPC Filing Notes

US 20020087173 A1 9 A61B-017/08

WO 200253206 A2 E A61M-000/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ
PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

Abstract (Basic): US 20020087173 A1

NOVELTY - A mitral valve annulus constricting device comprises a arched-shaped resilient clip for exerting an inward pressure on the mitral valve (12) annulus (20) when placed in a coronary sinus (14) of a heart adjacent to the mitral valve.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

(a) A mitral valve therapy system comprising a resilient clip being received within the coronary sinus of the heart, and an elongated introducer formed of flexible material and having a distal end including a coupling mechanism for being releasably coupled to the resilient component coupling element for guiding the resilient component into the coronary sinus of the heart, and being detached from the resilient component once the resilient component is placed within the coronary sinus, to permit the introducer to be removed from the heart while leaving the resilient component positioned within the coronary sinus; and

(b) A method of treating dilated cardiomyopathy of a human heart comprising providing the constriction device and advancing the constriction device into the coronary sinus of the heart until constriction device partially encircles the mitral valve of the heart.

USE - For constricting the mitral valve annulus of a human heart to treat mitral regurgitation.

ADVANTAGE - Since the device exerts inward pressure on the mitral valve when placed within the coronary sinus, which in turn constricts the mitral valve annulus, the mitral valve geometry is essentially restored thus promoting effective valve sealing action and eliminating mitral regurgitation. Since the device is employed in a comparatively non-invasive procedure, mitral valve regurgitation can be treated by the device at an early stage in the mitral regurgitation progression. The device can be placed with relative ease by any noninvasive cardiologist. Since the heart remains completely intact throughout the procedure, the effectiveness of the procedure can be readily determined. Should adjustments be deemed desirable, such adjustments can be made before the patient is sent to recovery.

DESCRIPTION OF DRAWING(S) - The figure shows a superior view of a human heart with the atria removed.

Mitral valve (12)

Coronary sinus (14)

Annulus (20)

pp; 9 DwgNo 1/10

Derwent Class: A96; P31; P34

International Patent Class (Main): A61B-017/08 ; A61M-000/00

February 27, 2003

Serial 09/686729

File 348:EUROPEAN PATENTS 1978-2003/Feb W03

File 349:PCT FULLTEXT 1979-2002/UB=20030220,UT=20030213

Set	Items	Description
S1	193232	ANNULOPLAST OR VALVE? ? OR ARTERY OR ARTERIAL OR ARTERIES - OR AORTA
S2	131	CUFF? ?(3N) (SEW OR SEWS OR SEWN OR SEWED OR SEWING)
S3	77988	CLIP OR CLIPS OR CLASP? ? OR ARMCLIP? ? OR FASTENER? ?
S4	117910	ANNULUS OR ANNULAR OR ANULUS OR ANULAR
S5	266	IC=A01B-029/04 OR IC=A01C-005/06
S6	16079	IC=A61B-017
S7	4160	ANNULOPLASTY OR VALVE? ?(3N)REPLAC?
S8	193232	ARTERY OR ARTERIES OR ARTERIAL OR AORTA OR VALVE? ?
S9	6598	CUFF? ?
S10	68	S7:S8(S)S3(S)S9
S11	16	S5:S6 AND S10
S12	19	S3(10N) (S4 OR S8) (10N)S9
S13	0	(S5:S6 AND S12) NOT S11
S14	218	S3(10N) (S4 OR S8) AND S5:S6
S15	29	S7 AND S3 AND S2
S16	26	S15 NOT S11
S17	1	S16 AND S5:S6
S18	25	S16 NOT S17
S19	27	S2 (S)S3
S20	4	S5:S6 AND S19
S21	0	S20 NOT (S11 OR S17)
S22	10	S18 AND S19
S23	0	22/3,AB/6,8

11/6/3 (Item 3 from file: 349)

00825203 **Image available**

SURGICAL FASTENER

Publication Year: 2001

11/6/4 (Item 4 from file: 349)

00802677 **Image available**

HEAT ACTIVATED SURGICAL FASTENER

Publication Year: 2001

11/6/10 (Item 10 from file: 349)

00571977 **Image available**

SURGICAL FASTENER

Publication Year: 2000

11/6/13 (Item 13 from file: 349)

00445150 **Image available**

EXTRACORPOREAL PNEUMOPERITONEUM ENCLOSURE AND METHOD OF USE

Publication Year: 1998

11/6/15 (Item 15 from file: 349)

00216267

SURGICAL CLIP FORMED OF SHAPE MEMORY ALLOY

Publication Year: 1992

11/3,K/2 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

February 27, 2003

Serial 09/686729

(c) 2003 WIPO/Univentio. All rts. reserv.

00882112 **Image available**

METHOD AND APPARATUS FOR STAPLING AN ANNULOPLASTY BAND IN-SITU

PROCEDE ET APPAREIL D'AGRAFAGE DE BANDE POUR ANNULOPLASTIE IN SITU

Patent Applicant/Assignee:

SULZER CARBOMEDICS INC, 1300 East Anderson Lane, Ausin, Texas 78752, US,
US (Residence), US (Nationality)

Inventor(s):

GUNDRY, Steven R., 7 Bow C Road, Redlands, CA 92373, US,

Legal Representative:

LOO Blossom E (agent), Sulzer Medica USA Inc., 3 East Greenway Plaza,
Suite 1600, Houston, TX 77046, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200215798 A2-A3 20020228 (WO 0215798)

Application: WO 2001US26712 20010827 (PCT/WO US0126712)

Priority Application: US 2000648574 20000825

Designated States: CA JP

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Publication Language: English

Filing Language: English

Fulltext Word Count: 3737

Main International Patent Class: **A61B-017/128**

Fulltext Availability:

Detailed Description

Detailed Description

... the holder has also been removed.

U.S. Patent 5,716,370 disclose& a heart **valve** is which can be replaced using minimally invasive methods which include a sutureless sewing **cuff** and a **fastener** delivery tool that holds the **cuff** against the patient's tissue while delivering **fasteners**, two at a time in opposite directions, to attach the **lcuff** to the tissue from insi out. Drawstrings are operated outside patient's body and cinch the sewing **cuff** to the **valve** body. The **cuff** is releasably mounted on the tool. The tool stores a plurality of **fasteners** thereon. Two rows of staggered **fasteners** are formed whereby **fasteners** are located continuously through-out the entire circumference of the **cuff**. A minimally invasive surgical method is disclosed, and a method and tool are disclosed for...

11/3,K/5 (Item 5 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00782456 **Image available**

METHOD AND APPARATUS FOR PERFORMING ANASTOMOSIS

TECHNIQUE D'ANASTOMOSE ET DISPOSITIF A CET EFFET

Patent Applicant/Assignee:

ORIGIN MEDSYSTEMS INC, 135 Constitution Drive, Menlo Park, CA 94025, US,
US (Residence), US (Nationality)

Inventor(s):

WILLIS Geoffrey, 585 Shell Parkway, Apt. 5208, Redwood City, CA 94065, US,
KRAMER Thomas, 1149 Orange Avenue, San Carlos, CA 94070, US,
SPENCE Paul, 5818 Orion Road, Louisville, KY 40222, US,
CHRISTAKIS George, 6 Pine Hill Road, Toronto, Ontario M4W 1P6, CA,
MCCOY Timothy, 398 Cedar Street, San Carlos, CA 94070, US,

Legal Representative:

EQUITZ Alfred (et al) (agent), Girard & Equitz L.L.P., Suite 1110, 400
Montgomery Street, San Francisco, CA 94104, US,

February 27, 2003

Serial 09/686729

Patent and Priority Information (Country, Number, Date):

Patent: WO 200115607 A1 20010308 (WO 0115607)

Application: WO 2000US24060 20000901 (PCT/WO US0024060)

Priority Application: US 99152001 19990901

Designated States: AU CA JP

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Filing Language: English

Fulltext Word Count: 22688

Main International Patent Class: A61B-017/08

Fulltext Availability:

Detailed Description

Detailed Description

... body 4').

A generally oval opening extends through body 43 and sheet 99, so that **cuff** 45 can be attached around an incision in the side wall of vessel 12 with...

...anastomosis shown in Fig. 4, an anvil (not shown) is inserted through an incision in **artery** 10, and **cuff** 40 (with each of the tines 42 in a straight configuration) is positioned in the...

...and to bend into the bent configuration shown in Fig. 4 (so as to attach **cuff** 40 to the tissue of **artery** 10 surrounding the incision). An anvil (not shown) is also inserted through an incision in **artery** 12, and **cuff** 45 (with each of the tines 44 in a straight configuration) is positioned in the incision with the sharp tips of tines 44 engaging the tissue surrounding the incision. A **cuff** -installing instrument (not shown) is then operated to force tines 44 against the anvil, thus...

...and to bend into the bent configuration shown in Fig. 4 (so as to attach **cuff** 45 to the tissue of **artery** 12 surrounding the incision). Then, **cuff** 40 is aligned with **cuff** 45, and body 98 of **cuff** 40 is attached to body 99 of **cuff** 45 by **fasteners** 114 (as shown in Fig. 4).

When cuffs 40 and 45 are so aligned...

11/3,K/7 (Item 7 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00777142 **Image available**

WIRE FASTENERS FOR USE IN MINIMALLY INVASIVE SURGERY AND METHODS

FIXATIONS DE FILS A UTILISER EN CHIRURGIE AVEC EFFRACTION MINIMALE ET
PROCEDES CONNEXES

Patent Applicant/Inventor:

WILLIAMSON Warren P IV, 101 Southbend Court, Loveland, OH 45140, US, US
(Residence), US (Nationality)

SPENCE Paul A, 5818 Orion Road, Louisville, KY 40222, US, US (Residence),
US (Nationality), (Designated only for: US)

KELLER George A, 1398 West Second Avenue, Grandview Heights, OH 43212, US
, US (Residence), US (Nationality), (Designated only for: US)

ROBINSON Cecil R, 4667 Heather Ridge Drive, Hilliard, OH 43206, US, US
(Residence), US (Nationality), (Designated only for: US)

WARD Thomas J, 1363 West First Avenue, Grandview Heights, OH 43212, US,
US (Residence), US (Nationality), (Designated only for: US)

Legal Representative:

GERNSTEIN Terry M, 1015 Salt Meadow Lane, McLean, VA 22101, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200110310 A1 20010215 (WO 0110310)

Application: WO 99US21459 19991014 (PCT/WO US9921459)

Priority Application: US 99369196 19990806
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 14566

Main International Patent Class: A61B-017/04

Fulltext Availability:

Detailed Description

Detailed Description

... valve annulus and through a sewing edge of an anuloplasty ring.

Figure 36 shows **wire fasteners of the present invention terminated into the sewing cuff anchoring a mitral valve in place according to the teaching of the present invention.**

Figure 37 shows an alternative...

...view of the alternative tool shown in Figure 37 in a configuration immediately before the **fastener** legs are cut, Figure 39 is a view similar to that shown in Figure 38 with the tool in a configuration immediately after the **fastener** legs are cut.

Detailed Description of the Preferred Embodiment of the Invention

Referring first to...

...is carried out by, after defining the necessary incisions, etc., placing the long leg wire **fasteners** of the present invention, then organizing the legs of those **fasteners** since the legs are long enough whereby some portion of the legs is located outside the patient. A sewing **cuff** of the prosthesis to be placed in the patient is placed on the **fastener** legs and guided down the legs into place, The prosthetic device, such as a heart **valve** in the best mode description here, is also placed on the legs of the **fasteners** and guided down the legs into place next to the sewing **cuff**, This is a relatively easy process since the **fastener** legs guide the items directly to the target area. A tensioning and forming tool is then guided down the legs of each individual **fastener** and operated. Operation of the tensioning and forming tool first immobilizes the legs adjacent to...

...then cuts that portion of the legs that will not be needed to form the **fastener** into a staple-like anchor, then forms the remaining portion of each leg by bending...

...abutting the device to press the device against the patient's tissue. The crown of the **fastener**, with a pledget if suitable, is located on the other side of the tissue, The...

...terminates the stub, cutoff end to retain and anchor the prosthesis against the tissue. The **fastener** thus formed has no protruding elements that might create blood clots and is very stable. This immobilizing, tensioning, and forming process is repeated for each **fastener**. The long legs of the **fasteners** and the manipulation of the **fasteners** by immobilizing, tensioning and forming the **fasteners** by means of these long legs permits the **fasteners** to be placed and used as guides for the remaining portions of the procedure while forming the **fasteners** in a manner that is secure, efficient and safe for the patient. The fastener is...the art and thus will not be discussed. As indicated in Figure 6, the placed **fasteners** can be stored in an organizer 59 while the other **fasteners** are being placed. Protectors 52 can be placed on the **fasteners** to protect the surgeon against undue contact with the **fastener** pointed ends. A **valve** V is shown with wire legs engaged and the in the sewing **cuff** prior to being seated in the patient...

11/3,K/9 (Item 9 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.
00749667 **Image available**
REPAIR APPARATUS FOR USE IN SURGICAL PROCEDURES
DISPOSITIF SERVANT A REPARER UN VAISSEAU UTILISE DANS DES INTERVENTIONS
CHIRURGICALES

Patent Applicant/Assignee:

EVA CORPORATION, Hugh Trout, III, 8218 Wisconsin Avenue #204, Bethesda,
MD 20814, US, US (Residence), US (Nationality)

Inventor(s):

TANNER Howard, 242 E. 100 South, Logan, UT 84321, US
EHMSEN Ronald, 10551 Wulff Drive, Villa Park, CA 92861, US

Legal Representative:

COYNE Patrick J, Collier, Shannon, Rill & Scott, PLLC, Suite 400, 3050 K
Street, N.W., Washington, DC 20007, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200062679 A1 20001026 (WO 0062679)
Application: WO 2000US9917 20000414 (PCT/WO US0009917)
Priority Application: US 99293175 19990416

Designated States: JP

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Filing Language: English

Fulltext Word Count: 22800

Main International Patent Class: **A61B-017/00**

Fulltext Availability:

Detailed Description

Detailed Description

... abdominal aorta. Fig. 4 is a perspective view of the prosthetic bifurcated tube graft and **cuff** assembly of Fig. 2 secured within the abdominal **aorta** -, 1 2 Fig. 5 is a perspective view of a prosthetic tube graft and **cuff** according to another embodiment of the present invention;

Fig. 6 is a perspective view of the prosthetic tube graft and **cuff** of Fig. 5 secured within the abdominal **aorta**; Fig. 7 is a perspective view of the connection between the prosthetic tube graft and the **cuff**; Fig. 8 is a side view of the prosthetic tube graft of Fig. 6 secured to a secondary **cuff**, Fig. 9 is an exploded view of the connection between the prosthetic tube graft and I 0 secondary **cuff** as shown in Fig. 8; Fig. I 0 is a perspective view of attachment **cuffs** according to another embodiment of the present invention; Fig. I I is a perspective view of the flexible attachment **cuff** according to embodiments of the present invention; 1 5 Fig. 12 is a perspective view of the attachment **cuffs** of Fig. I 0 having a prosthetic tube graft secured between the attachment **cuffs**; Fig. 13 is a perspective view of an Intra vascular Angloscopy (IVA) based repair system...

...embodiment of a penetration device according to the present invention and an embodiment of a **fastener** cartridge according to the present invention',

Fig. 18 is a perspective view of an IVA...

...repair system according to another embodiment of the present invention containing a penetration device and **fastener** cartridge according to the present invention; Fig. 19 is a perspective view of an IVA based repair system according to the embodiment of Fig. 18 containing a penetration device and **fastener** cartridge according to another embodiment of the present invention; Fig. 20 is a perspective view...

...repair system according to another embodiment of the present invention

containing a penetration device and **fastener** cartridge according to the present invention; I 0 Fig. 21 is an end view of...
...to another embodiment of the present invention; Fig. 23 is an end view of the **fastener** cartridge according to the embodiment of 1 5 Fig. 17; Fig. 24 is a perspective...
...Fig. 25 is a schematic view of another advancing mechanism of a penetration device and **fastener** cartridge according to another embodiment of the present invention; Figs. 26 and 27 are perspective...
...device depicted in Fig. 26; Figs. 30 and 31 are perspective views of a wire **fastener** for securing the cuff detail of a surgical cuff to a vessel wall according to an embodiment of the present invention; 14 Figs. 32 and 33 are perspective views of a wire **fastener** according to another embodiment of the present invention for securing the cuff detail of a surgical cuff to a vessel wall; Figs. 34 and 35 are perspective views of a wire **fastener** according to another embodiment of the present invention for securing the cuff detail of a surgical cuff to a vessel wall; Figs. 36, 37, 38, 39, 40 and 41 are perspective views of a **fastener** according to another embodiment of the present invention for securing the cuff to a vessel wall; Fig. 42 is a schematic view of an embodiment of the penetration device according 1 0 to the present invention having **fasteners**, as shown in Figs. 34, 37, 38
...view of an another embodiment of the penetration device according to the present invention having **fasteners**, as shown in Figs. 3 6, 3 7, 3 8 and 3 9 stored therein; 1 5 Figs. 44 and 45 are perspective views illustrating the **fastener** attachment of the cuff detail to the vessel wall using a **fastener** as shown in Figs. 34 and 3 5 according to an embodiment of the present...

11/3,K/11 (Item 11 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00570372 **Image available**

MEANS AND METHOD FOR PERFORMING AN ANASTOMOSIS

MOYENS ET PROCEDE PERMETTANT D'EFFECTUER UNE ANASTOMOSE

Patent Applicant/Assignee:

GUIDANT CORPORATION,
SPENCE Paul A,
WILLIAMSON Warren P IV,
CHRISTAKIS George,

Inventor(s):

SPENCE Paul A,
WILLIAMSON Warren P IV,
CHRISTAKIS George,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200033745 A1 20000615 (WO 0033745)

Application: WO 98US25874 19981207 (PCT/WO US9825874)

Priority Application: WO 98US25874 19981207

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
FI GB GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US
UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE
CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN
GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 20455

Main International Patent Class: **A61B-017/11**

International Patent Class: **A61B-017/115**

Fulltext Availability:

Detailed Description

Detailed Description

... double cuff form can be used to form an end-to-side anastomosis. The double **cuff** form of the invention is applied as indicated in Figures 19 A tool, which...

...be discussed below in connection with Figures 24 et seq, is used to place a **cuff** on the graft, and then a second **cuff** on the **artery**. The vessels are then oriented adjacent to each other as indicated in Figure 19, and then brought together so the two **cuffs** are coupled as indicated in Figure 20. The **cuffs** are then coupled together as indicated in Figure 21 to form an end-to-side...

...or to form a side-to-side anastomosis as shown in Figure 23. The two **cuffs** are coupled together by a suitable **fastener**, such as the SUBSTITUTE SHEET (RULE 26) above-discussed male/female coupling shown in Figure...tissue of the blood vessel while shaping the cuff to the blood vessel.

The tissue **fasteners** must be turned in the manner of a staple in order to fully connect a **cuff** to a blood vessel. Accordingly, instrument 120 includes **artery** anvil 136 and graft anvil 134 which are removably fixable to the handle frame. Graft...220 engage the outside of the artery. The tissue retention pins can then be set. **Artery** anvil head 274 includes a bullet shaped body 280 having two ends 282 and 284...

...end 284. This channel permits blood flow through the anvil head maintaining perfusion while the **cuff** is being attached. A **fastener** turning section 288 is defined in top surface 290 of the head 274 adjacent to...

...of the tissue fastening pins when they are forced through the blood vessel wall. The **fastener** turning section is concave so the pin is turned as it engages and follows the anvil head surface adjacent to the turning section. This rotates the **fastener** end so the **fastener** is gradually bent from the Figure 7A shape to a curved shape shown in Figure 25, for example. The tissue **fastener** is forced to follow this turning section by engagement of the driver head surface against the **cuff** and against the **fastener** body 62 as the heads 218, 220 are moved into engagement with the **cuff** by operation SUBSTITUTE SHEET (RULE 26) of the finger frame 122 and as the **artery** anvil is moved in direction 260 by operation of the knob 247 on threaded portion...

...to defining an effective anastomosis. An assembled instrument is shown in Figure 26 with an **artery** anvil being inserted through an incision I in an **artery** A and a **cuff** 40 on the driver elements. As can be seen, once the incision is made, the **artery** anvil head is button holed into the **artery** via the incision. The anvil head is actually larger than the incision in the **artery** but can be angled through the incision into position as shown in Figure 26. The...

...motion associated with the beating heart. As indicated in Figure 27, after the head supported **cuff** contacts the outside of the **artery**, driver heads 218, 220 are operated to force the edges 232 against the waist 49...

...knob 247 is further operated to draw the anvil SUBSTITUTE SHEET (RULE 26) and the **cuff** together. Further operation of the knob 247 forces the tissue **fasteners** through the blood vessel tissue, into turning section 288 and around on themselves in the manner of a staple whereby the **cuff** is fixed to the blood vessel. During this operation, blood flows through the **artery** via channel 286. Once the **cuff** is attached to the **artery**, the driving heads

218, 220 are opened as shown in Figure 28 so the anvil head 280 can be removed from the **artery**. Since the **cuff** is connected to the driver heads, opening the driver heads will enlarge the incision thereby permitting the **artery** anvil to be removed. The graft vessel is prepared in a similar manner. The graft...

...so. The instrument is then maneuvered so the graft blood vessel is adjacent to the **cuff** mounted on the **artery**. The knob 247 is then operated to

force the graft blood vessel into contact with the **cuff** portion that is not attached to the **artery** to attach the graft vessel to the **artery** attached **cuff**. As shown in Figure 29, the graft anvil head has a **fastener** turning section 296 which operates to turn the **fasteners** in that section of the **cuff** in a manner identical to the above-described turning of the SUBSTITUTE SHEET (RULE 26) **fasteners** in the **artery**. This is illustrated in Figure 29 for a single **cuff** embodiment. Turning section 296 is used to turn the tissue retention pins to either attach a single **cuff** to the blood vessel or to attach a separate **cuff** to the blood vessel. once the **cuff** is attached to the graft (for the single **cuff** embodiment), or the **cuff** on the graft is attached to the **cuff** on the **artery** (for the double **cuff** embodiment) by attaching the coupling elements 106 and 104 (for the double **cuff** form) or the bridges 110 are manipulated to bring the inside edges 26 and 261...
...remove the docking pins 70 and 82 from the anvil pins 294 to release the **cuff** or **cuffs** from the instrument. The garrot suture is cut and the graft anvil is removed from...the artery. Dock the artery anvil to the instrument. SUBSTITUTE SHEET (RULE 26) Cinch the **fasteners** joining the **cuff** to the **artery**. Operate the instrument to open the arteriotomy to full length. Open the driver heads and...
...drivers to accept the graft anvil. Dock the graft anvil to the instrument. Cinch the **fasteners** joining the **cuff** to the graft (single **cuff** form), or the **cuff** on the graft to the **cuff** on the **artery** (double **cuff** embodiment). Release the graft garret. Release the graft anvil from the instrument and tie off...

11/3,K/12 (Item 12 from file: 349)

DIALOG(R)File 349:PCT_FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00514500 **Image available**

ANASTOMOSIS DEVICE AND METHOD

DISPOSITIF ET PROCEDE POUR L'ANASTOMOSE

Patent Applicant/Assignee:

CORVASCULAR INC,
DUHAYLONGSOD Francis G,
FRENCH Fritz,
CHAPMAN Troy,
NARCISO Hugh L Jr,

Inventor(s):

DUHAYLONGSOD Francis G,
FRENCH Fritz,
CHAPMAN Troy,
NARCISO Hugh L Jr,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9945852 A2 19990916

Application: WO 99US4714 19990303 (PCT/WO US9904714)

Priority Application: US 9837113 19980309; US 9837109 19980309; US 9837216 19980309

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES

FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU

LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA

UG US UZ VN YU ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ

TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI

CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 20864

Main International Patent Class: **A61B-017/11**

Fulltext Availability:

Detailed Description
Detailed Description

... is not intended to limit the invention. Anastomoses were created on cadaver hearts with a **fastener** constructed as shown in Fig. IC. The **fastener** was formed by cutting a stent as shown in 1 6 Fig. 9 in half The left internal thoracic **artery** or saphenous vein were harvested and passed through the length of the **fasteners** so that a 2 mm to 3 mm **cuff** extended beyond the end of the **fasteners**. The **cuff** was everted around the end of the **fastener** (Fig. 4). The **fastener** was then compressed around an angioplasty balloon catheter. A 7-10 mm arteriotomy was performed and the **fastener** was inserted through the arteriotomy into the coronary **artery** about 75% to 1 00% the length of the **fastener**. The balloon was inflated to 14 atmospheres for 30 seconds. The balloon was then deflated and the catheter was removed, leaving the **fastener** within the coronary **artery**. Colored saline was injected into the internal thoracic **artery** and saphenous vein grafts under high pressure (in ...300 mm Hg). In two of nine instances leaks were observed. In one case, the **fastener** was not seated deeply enough within the coronary vessel (>25% of the length of the **fastener**). In one additional cadaver, a biologic glue was applied around the everted surface of the...

17/3,AB/1 (Item 1 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.
00522493

DRIVER TOOL FOR HEART VALVE PROSTHESIS FASTENERS

OUTIL D'ENTRAINEMENT POUR FIXATIONS PROTHETIQUES DE VALVULE CARDIAQUE

Patent Applicant/Assignee:

ST JUDE MEDICAL INC,

Inventor(s):

BUCHANAN Eric S,

ANDERSON Kimberly A,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9953845 A1 19991028

Application: WO 99US8817 19990419 (PCT/WO US9908817)

Priority Application: US 9862822 19980420; US 98203169 19981201

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE
ES FI GB GE GH GM HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG
UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM
AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM
GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 6946

English Abstract

A driver tool (210) which drives helical **fasteners** (214) through a heart valve component (212) into tissue (213). The tool (210) has a tool housing (216) with a distal end (218) couplable to engage the implanted component (218). A drive shaft (222) at the proximal end of the driver tool (210) couples to a driving force. Multiple driver tips (266) couple to helical **fasteners** (214) for the heart valve component (212).

22/3,AB/6 (Item 5 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.
00773804

February 27, 2003

Serial 09/686729

**HEART VALVE PROSTHESIS WITH A RESILIENTLY DEFORMABLE RETAINING MEMBER
PROTHESE DE VALVULE CARDIAQUE AVEC UN ELEMENT DE RETENUE ELASTIQUEMENT
DEFORMABLE**

Patent Applicant/Assignee:

SULZER CARBOMEDICS INC, 1300 East Anderson Lane, Austin, TX 78752, US, US
(Residence), US (Nationality)

Inventor(s):

GRIFFIN Charles Durward, 16 Valley View Circle, Leander, TX 78641, US

CAMPBELL Louis A, 8122 Raintree Place, Austin, TX 78759, US

KLOSTERMEYER Tammi Elizabeth, 4301 Red Cloud Drive, Austin, TX 78759, US

Legal Representative:

SCOTT Timothy L, Sulzer Medica USA Inc., Suite 1600, 3 East Greenway
Plaza, Houston, TX 77046, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200106959 A1 20010201 (WO 0106959)

Application: WO 2000US20140 20000724 (PCT/WO US0020140)

Priority Application: US 99360093 19990723

Designated States: CA JP

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Publication Language: English

Filing Language: English

Fulltext Word Count: 3582

English Abstract

A valve body assembly (14) for being mounted adjacent an annulus (12) within a heart. A first retainer (16) is attached to the valve body assembly (14) for engaging a first side (12a) of the annulus (12). A second retainer (18) is attached to the valve body assembly (14) and includes a resiliently deformable retaining member (19) for resiliently engaging a second side (12b) of the annulus (12). The resiliently deformable retaining member (19) is collapsed to a size permitting it to be inserted into through the annulus (12) and positioned adjacent the second side (12b) of the annulus (12). The retaining member (19) is then allowed to expand such that it resiliently engages the second side (12b) of the annulus (12).

22/6/8 (Item 7 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2003 WIPO/Univentio. All rts. reserv.

00329941

ROTATABLE SEWING CUFF FOR A HEART VALVE PROSTHESIS